

Skin and Oral Health Changes in Pregnancy

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Noon Conference
November 3, 2010

Objectives

- To become aware of oral healthcare issues in pregnancy
- To understand normal physiologic skin changes in pregnancy
- To be able to distinguish between different pregnancy-specific dermatologic disorders

Common Oral Problems in Pregnancy

- Oral lesions
- Caries
- Pregnancy oral tumor
- Loose mobile teeth
- Gingivitis
- Periodontitis



General Principles of Oral Changes in Pregnancy

- ◉ Increased gastric acid exposure in oral cavity
 - Nausea & vomiting, lax esophageal sphincter
- ◉ Increased levels of progesterone and estrogen
 - Loosened periodontium (ligament & bone supporting teeth)
- ◉ Changes in oral flora and decreased immunity

What's the diagnosis?



DENTAL CARIES



GINGIVITIS



PYOGENIC GRANULOMA



PERIODONTITIS

Dental Caries

- Concept of bacterial (*Strep mutans*) transmission from mother to infant
- Studies showing primary prevention can decrease tooth decay in offsprings
 - Daily rinse of 0.05% sodium fluoride + 0.12% chlorhexidine beginning in 6th month of pregnancy
 - Chewing xylitol-containing gum 3-5X day



Pregnancy Oral Tumor (Pyogenic Granuloma)

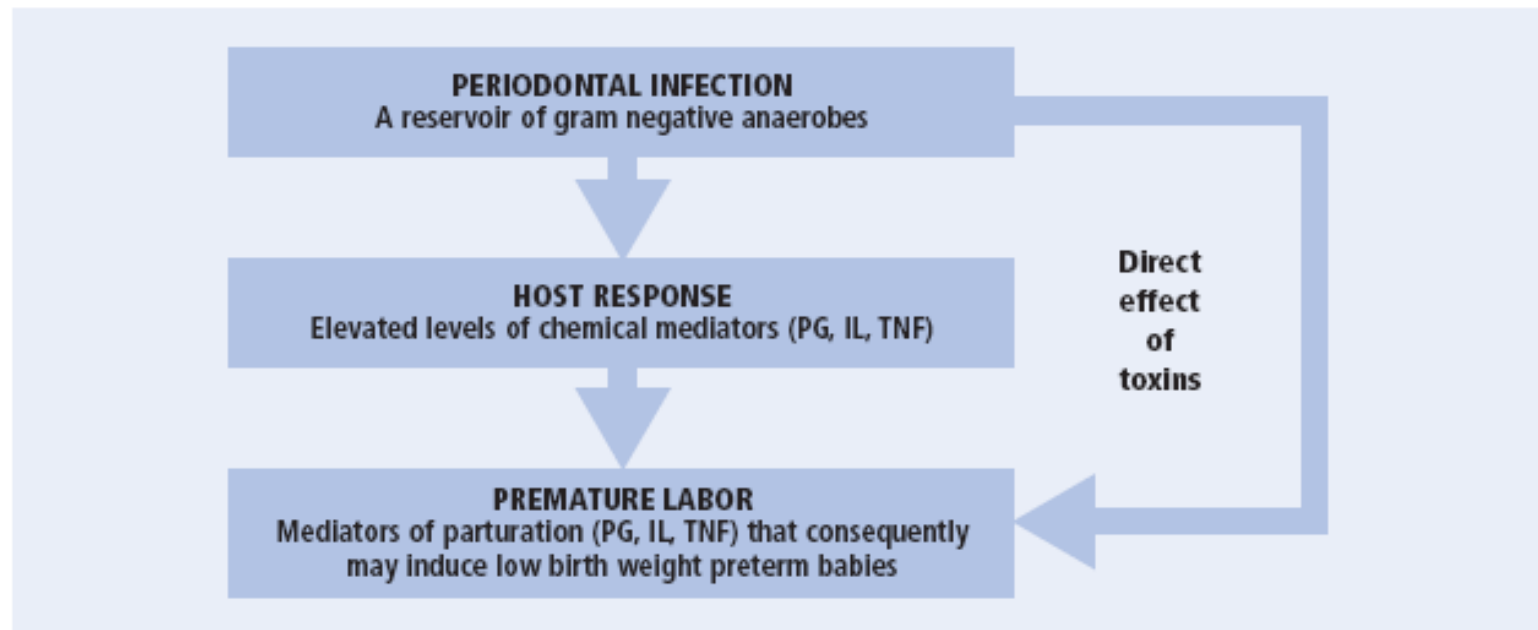
- Occurs in up to 5% pregnancies
- Vascular lesion – erythematous, smooth, lobulated
- Caused by increased progesterone + local irritants + bacteria
- Typically on gingiva but also tongue, palate, or buccal mucosa
- Treatment is observation
- Most resolve after delivery



Periodontitis

- Possible association with preterm birth and low birth weight?

Figure 1. Periodontal Disease and Preterm Low Birthweight: Proposed Biological Mechanism



(Adapted from "Does periodontal disease relate to pre-term low birth weight babies?": The Colgate Oral Care Report 11(3);2001;page 3).

Helpful Reminders to Our Patients

- Brush twice daily with fluoride toothpaste.
- Floss daily.
- Limit foods containing sugar to mealtimes only.
- Choose water or low-fat milk as beverage.
- Use 1 tsp of baking soda in a cup of water to rinse out mouth after vomiting.
- Chew sugarless or xylitol-containing gum after eating.
- Consider mouth rinses with chlorhexidine for gingivitis.

Questions the Dentist Might Ask Us!

● "Can I take x-rays?"

- > Yes!
- > When possible, better to wait until after first trimester.
- > Teratogenic risk of radiation exposure from oral films is 1000x less than natural risk of SAB or malformation.
- > A full mouth series of 22 dental x-rays equals 2.2 mrad.
 - Need ≥ 5 rad to cause SAB or malformation

Questions the Dentist Might Ask Us!

- ◉ “Can I inject local anesthetic with epinephrine?”
 - Yes.
 - Lidocaine is category B, whereas mepivacaine is category C.
 - Theoretical risk of epinephrine on uterine muscle but no studies have confirmed this.
 - No increased risk of malformation with lidocaine.

Questions the Dentist Might Ask Us!

- “Can I use 30% nitrous oxide in the dental office?”
 - Use should be limited to cases where topical or local anesthetic inadequate.
 - Pregnant women require lower levels of NO, so always use a pulse oximeter ($O_2 \geq 95\%$)
 - Increased risk of aspiration → use semi-seated position

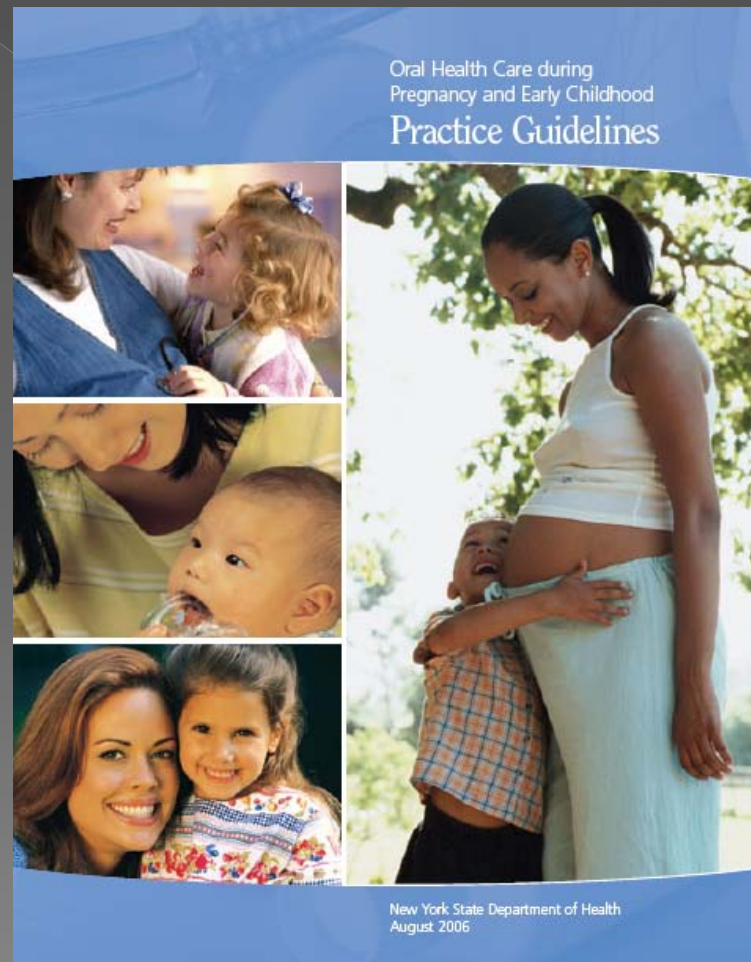
Questions the Dentist Might Ask Us!

● “What medications can I prescribe?”

Table 1. Acceptable and Unacceptable Drugs for Pregnant Women

These drugs may be used during pregnancy.	FDA Category	These drugs should NOT be used during pregnancy.	FDA Category
ANTIBIOTICS		ANTIBIOTICS	
Penicillin	B	Tetracyclines	D
Amoxicillin	B	Erythromycin in the estolate form	B
Cephalosporins	B	Quinolones	C
Clindamycin	B	Clarithromycin	C
Erythromycin (except for estolate form)	B		
ANALGESICS		ANALGESICS	
Acetaminophen	B	Aspirin	C
Acetaminophen with codeine	C		
Codeine	C		
Hydrocodone	C		
Meperidine	B		
Morphine	B		
After 1st trimester for 24 to 72 hrs only			
Ibuprofen	B		
Naprosyn	B		

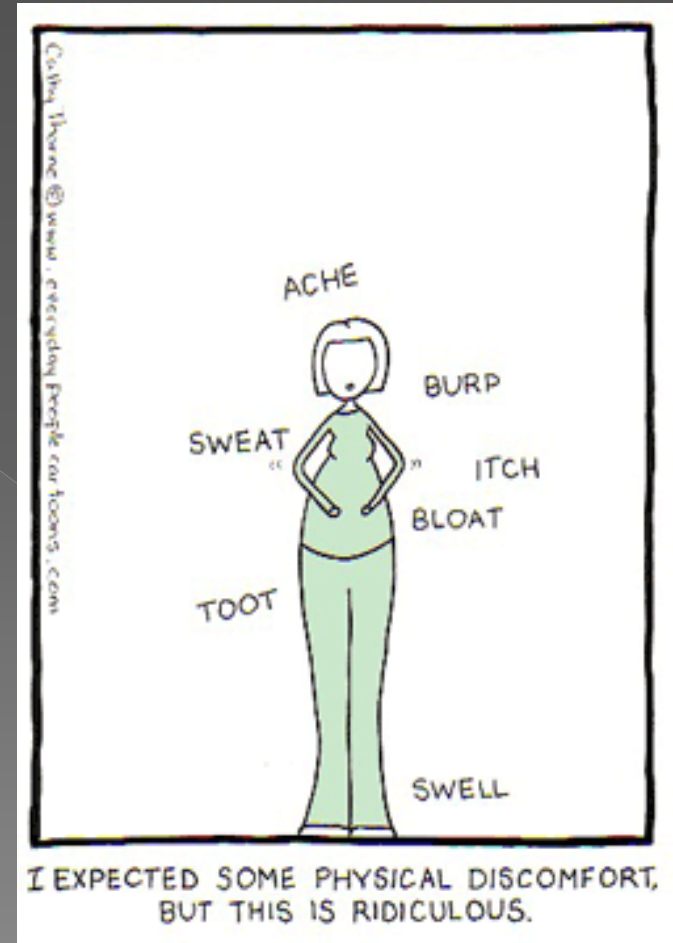
A Really Great Resource on Oral Health in Pregnancy



<http://www.health.state.ny.us/publications/0824.pdf>

Physiologic Skin Changes in Pregnancy

- Pigmentary
- Hair & nail
- Glandular
- Connective tissue
- Vascular



Pigmentary Changes

- Hyperpigmentation
 - Occurs in 95% of pregnant women
 - Increase in melanocyte-stimulating hormone (placenta) and serum estrogen levels
 - Darkening in areolae, nipples, genital skin, inner thighs
 - Common examples: linea nigra, melasma



Melasma



- “Chloasma” or “Mask of Pregnancy”
- Occurs in up to 70% of pregnant women
- Exacerbated by UV exposure (use sunscreens!)
- Often worse in women with darker complexion
- Most cases (70%) resolve postpartum in 1 year, but may recur in subsequent pregnancies or with use of OCPs
- Severe postpartum melasma: topical tretinoin, hydroquinone, and corticosteroids

Hair & Nail Changes

◉ Hair

- Mild hirsutism (mostly on face)
 - Caused by increased placental & ovarian androgens on pilosebaceous unit
 - Resolves 6 mo PP
- Thickening of scalp hair
- PP hair shedding (telogen effluvium), resolves 1-5 mo (complete resolution may take up to 15 mo)

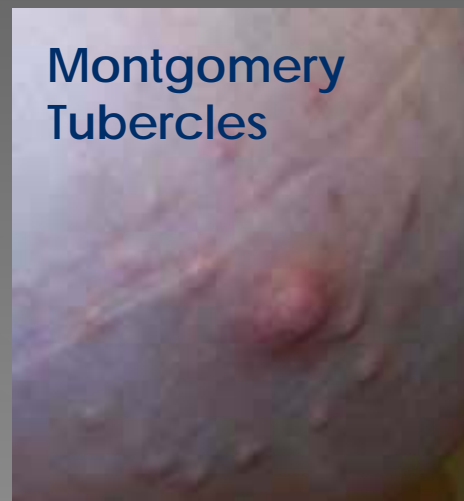


◉ Nails

- Usually grow faster during pregnancy
- Common: brittleness, transverse grooves, onycholysis, and subungual keratosis

Glandular Changes

- Eccrine gland function increases (except on palms)
 - Increased: hyperhidrosis, miliaria ("sweat rash", "prickly rash")
- Apocrine gland function decreases
 - Hidradenitis suppurativa improves
- Sebaceous gland function may increase
 - But effect on acne vulgaris variable



Connective Tissue Changes

- Stretch marks (striae gravidarum)
 - Up to 90% pregnant women by 3rd trimester
 - Risk factors: younger women, nonwhite women, family history, larger babies, high BMI, increased weight gain
 - No evidence they work:
 - Vit E cream, cocoa butter, aloe vera lotion, olive oil
 - Limited evidence:
 - *Centella asiatica* extract
 - Most striae fade but they may never disappear completely ☹
 - Postpartum Rx: topical tretinoin (Retin-A), oral retinoin, laser treatment



Vascular Changes



- Results from rising estrogen levels and increased blood volume → vascular distention/instability and proliferation of blood vessels
- Commonly seen:
 - Spider angiomas & telangiectasias
 - Saphenous, vulvar, and hemorrhoidal varicosities
 - Palmar erythema
 - Non-pitting edema of face & extremities
 - Vasomotor instability (facial flushing, hot & cold sensation)
 - Gum hyperemia and gingivitis
 - Pyogenic granuloma of pregnancy

Pregnancy-Specific Dermatologic Disorders

- ◉ Pruritic urticarial papules and plaques of pregnancy (PUPPP)
- ◉ Pemphigoid gestationis
- ◉ Pustular Psoriasis of Pregnancy (Impetigo herpetiformis)
- ◉ Prurigo of pregnancy
- ◉ Pruritic folliculitis of pregnancy

Pruritic Urticarial Papules and Plaques of Pregnancy (PUPPP)

● Incidence

- Most common dermatosis of pregnancy (1/130 to 1/300)
- 75% are primigravidas

● Etiology unclear

- Delayed hypersensitivity reaction? Fetal DNA?
- Skin stretching triggers inflammatory response? (multigestation, macrosomia, maternal weight gain)
- Higher levels of progesterone → inflammatory response

PUPPP (2)

● Clinical Presentation

- Mean onset 35wks
 - Pruritic erythematous papules that usually begin within abdominal striae with **periumbilical sparing** (A)
 - May then spread to extremities and coalesce to form urticarial plaques (B)
 - Face, palms, and soles usually spared
 - In patients with fair skin, white halos surround erythematous papules (C)



PUPPP (3)



PUPPP (4)



- ◉ Diagnosis
 - Clinical
 - Biopsy not necessary (direct immunofluorescence negative)
- ◉ Treatment
 - Symptomatic relief with antihistamines and topical corticosteroids
 - In severe cases, consider short course of oral prednisone
- ◉ Prognosis
 - No adverse fetal or maternal outcomes
 - May worsen after delivery but generally resolves 15 days postpartum
 - Clinical recurrence in subsequent pregnancies uncommon; if it does, usually less severe

Pemphigoid Gestationis

- ◉ An autoimmune blistering disorder aka "herpes gestationis"
- ◉ Incidence: 1/1700 to 1/50,000
 - > Primarily affects caucasians
 - > Associated with autoimmune diseases (Graves')
 - **Periodic testing of thyroid function indicated**
 - > Sometimes associated with molar pregnancies
- ◉ Etiology
 - > Linked to presence of HLA-DR3 and HLA-DR4
 - > Shares many features with bullous pemphigoid, including autoantibodies to a 180kDa hemidesmosome

Pemphigoid Gestationis (2)

● Clinical Presentation

- Usually appears in 2nd or 3rd TM (mean onset, 21 wks)
- **Beginning on trunk pruritic urticarial plaques or papules surrounding umbilicus (A)**
- Vesicles may also be present (B)
- Rapidly spreads and forms bullae (C)
- Spares face, scalp and mucous membranes



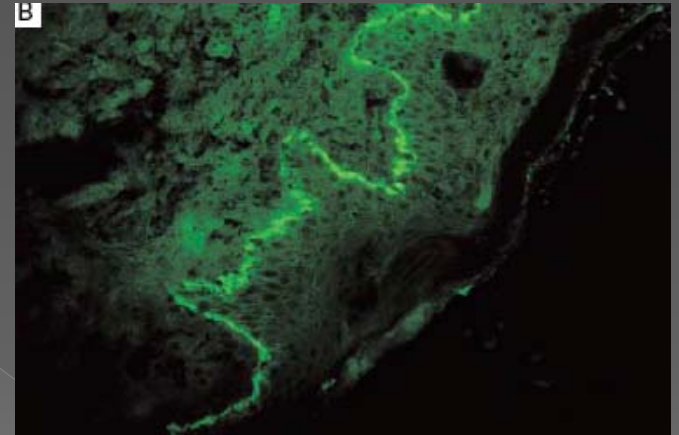
Pemphigoid Gestationis (3)



Pemphigoid Gestationis (4)

◉ Diagnosis

- 2 skin biopsies recommended
 - Linear C3 band at basement membrane zone on immunofluorescence
- Lab tests unnecessary



◉ Treatment

- First line: Oral corticosteroids 20-60 mg/day
- Refractory cases: IVIG, cyclosporine

Pemphigoid Gestationis (5)

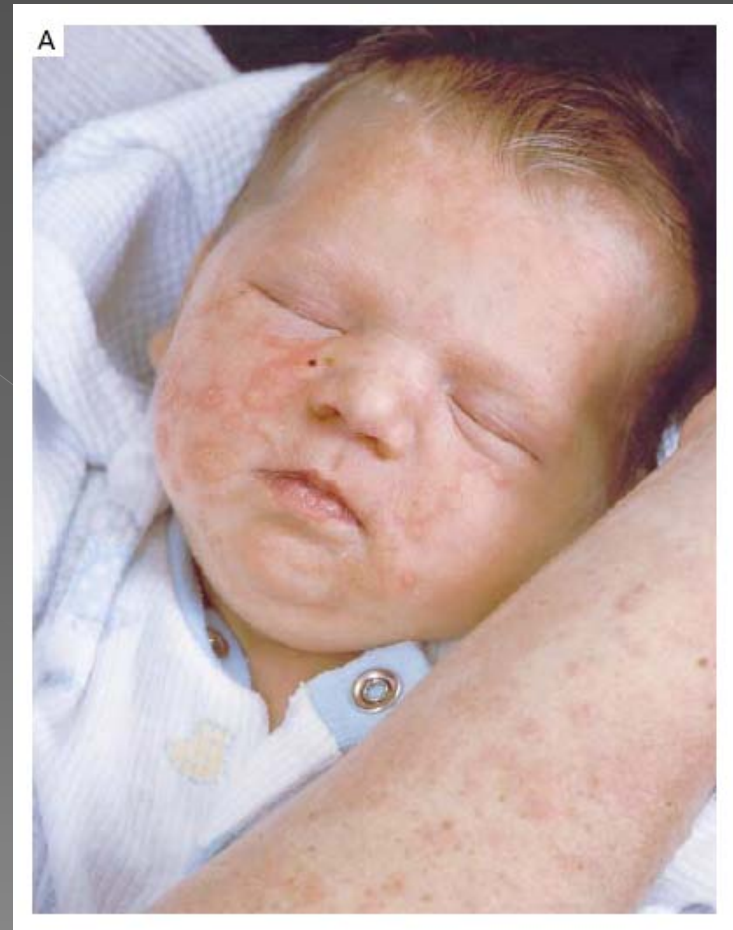


● Prognosis

- Runs variable course
- Flares at delivery 75% of cases
- Regresses spontaneously over weeks or months after delivery
- **Increased incidence of SGA (?placental insufficiency) → Antenatal testing at time of diagnosis ± growth ultrasound**
- **Tends to recur with future pregnancies**, but will skip a pregnancy 8% of the time
- May also have non-gestational recurrences triggered by OCPs or menstrual cycle

Pemphigoid Gestationis (6)

- Maternal autoantibodies can be passively transferred to fetus, causing vesicles & bullae in newborn



Pustular Psoriasis of Pregnancy

- ◉ Formerly known as “impetigo herpetiformis”
- ◉ Incidence: exceedingly rare
- ◉ Etiology
 - > Variant of generalized pustular psoriasis, elicited by metabolic milieu?
 - > Personal or family history of psoriasis is usually absent
 - > Unclear if condition is unique to pregnancy or just exacerbated by it

Pustular Psoriasis of Pregnancy (2)

● Clinical Presentation

- Can occur anytime during pregnancy
- Flu-like symptoms often present (N/V, diarrhea, fevers, chills, etc)
- Pruritis mild / absent
- Rash (often painful)
 - Erythematous plaques with rings of pustule
 - Plaques enlarge on periphery while center crusts and erodes
 - Most commonly appears on thighs and groin
 - May spread centrifugally to trunk and extremities; mucous membranes may be involved; spares face, hands, and feet

Pustular Psoriasis of Pregnancy (3)



Pustular Psoriasis of Pregnancy (4)

○ Diagnosis

- › Lab findings: **leukocytosis, elevated ESR, hypocalcemia, and decreased vitamin D levels**
- › Biopsy: same findings as pustular psoriasis in non-pregnant women
- › Pustule culture: negative

○ Treatment

- › First line: Prednisone 15-60 mg/day
- › Refractory cases: Cyclosporine 100 mg BID
- › Treat hypocalcemia, if present
- › Antibiotics if secondarily infected lesions

Pustular Psoriasis of Pregnancy (5)

This 28-year-old woman developed **fever, hypotension, leukocytosis, widespread erythema, and pustules** at **34 weeks gestation** during her first pregnancy. She was hospitalized for several months, and the eruption resolved within the first month after delivery of a normal full term infant. A skin biopsy showed changes typical of pustular psoriasis.

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<http://www.dermatlas.org>.



Pustular Psoriasis of Pregnancy (6)

◎ Prognosis

- Resolves quickly postpartum
- Maternal prognosis is excellent with treatment
- However, increased risk of perinatal mortality despite treatment; risk not quantifiable because very few cases
- **Adverse fetal outcomes (?placental insufficiency): IUGR, fetal demise, neonatal death → antenatal testing highly recommended**
- Seems to recur in pregnancies or with menses or OCP use

Prurigo of Pregnancy

- Incidence

- 1/300 to 1/450

- Etiology unknown

- Clinical Presentation

- Usually begins 2nd or 3rd trimester
 - Erythematous papules and nodules on extensor surfaces of extremities
 - Could just be pre-existing atopic dermatitis exacerbated by pregnancy?



Prurigo of Pregnancy (2)

- ◉ Diagnosis
 - Clinical
 - Biopsy not necessary
- ◉ Treatment
 - Symptomatic treatment with topical corticosteroids or antihistamines
- ◉ Prognosis
 - Usually resolves in immediate postpartum period
 - No adverse maternal or fetal outcomes
 - Recurrence is common



Pruritic Folliculitis of Pregnancy



- Incidence: 1/3000?
- Etiology unknown
- Clinical presentation
 - Presents in 2nd or 3rd trimester
 - Pruritis not a major feature
 - Erythematous follicular papules and sterile pustules concentrated around hair follicles beginning on abdomen and then spreading to extremities

Pruritic Folliculitis of Pregnancy (2)

- Diagnosis
 - Clinical
 - No biopsy necessary
- Treatment
 - Topical corticosteroids
 - Benzoyl peroxide
 - UV B light therapy
- Prognosis
 - No known adverse maternal or fetal outcomes
 - Resolves within 2 weeks postpartum
 - Recurrence unknown



Quick Review of Dermatoses



Prurigo of Pregnancy

Pruritic Folliculitis of Pregnancy

	Mean Onset	Diagnosis	Adverse Outcomes	Recurrence
PUPPP	Mid-to-late 3 rd TM (~ 35 wks)	Clinical	None	No
Pemphigoid Gestationis	2 nd /3 rd TM (21 wks)	Biopsy	SGA?	Yes, but 8% may skip pregnancies
Pustular Psoriasis of Pregnancy	Anytime	Biopsy CBC, ESR, Ca, Vit D	IUGR, fetal demise, neonatal death; Maternal mortality	Yes?
Prurigo of Pregnancy	2 nd /3 rd TM	Clinical	None	Yes
Pruritic Folliculitis of Pregnancy	2 nd /3 rd TM	Clinical	None	Yes

Objectives

- To become aware of oral healthcare issues in pregnancy
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